

## **Herbicide performance in soybeans at Lamberton, MN in 2008.**

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The objective of this study was to evaluate soybean herbicide combinations for annual grass and annual broadleaf weed control in glyphosate-resistant/sulfonylurea tolerant soybeans. This study was conducted on a Normania loam soil containing 3.8% organic matter, pH 6.1 and soil test P and K levels of 64 and 296 lb/A, respectively. A randomized complete block design with four replications and a plot size of 10 by 30 ft was used. The site was planted to oats in 2007 and was fall chiseled. On May 27, 2008, Pioneer '91M92 RR/STS' glyphosate-resistant/sulfonylurea tolerant soybeans were planted in 30-inch rows at a seeding rate of 160,000 seeds/A. On July 29, all plots were treated with Warrior for soybean aphid control. All treatments were applied with a tractor-mounted sprayer delivering 20 gpa at a pressure of 40 psi. The sprayer was equipped with 8002 flat-fan nozzles spaced 15 inches apart on the boom. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

Date	May 27	June 18	June 23	July 15
Treatment	PRE	POST I	POST II	POST III
Temperature (F)				
air	54	77	75	84
soil (4 inch)	58	82	76	86
Relative humidity (%)	35	32	39	55
Wind (mph)	E 12	calm	calm	N 6
Sky	cloudy	p. cloudy	clear	clear
Soil moisture	dry	dry	dry	dry
Soybean				
leaf no.	-	V2	V3	R1
height (inch)	-	4	6	20
Yellow foxtail				
leaf no.	-	2 to 4	3 to 5	2 to 4
height (inch)	-	2 to 4	5 to 7	3 to 5
no./ft <sup>2</sup>	-	76	62	<1
Common lambsquarters				
leaf no.	-	2 to 4	6 to 8	-
height (inch)	-	1 to 3	3 to 6	-
no./ft <sup>2</sup>	-	2	3	-
Tall waterhemp				
leaf no.	-	2 to 4	4 to 6	3 to 5
height (inch)	-	1 to 3	3 to 5	3 to 5
no./ft <sup>2</sup>	-	6	4	<1
Rainfall after application (inch)				
1 week	0.93	0.00	0.61	1.14
2 week	1.54	0.61	0.00	1.97
3 week	1.05	0.00	0.02	0.22

(Southwest Research and Outreach Center, University of Minnesota, Lamberton).

**Table. Herbicide performance in soybeans at Lamberton, MN in 2008 (Getting, Gunsolus and Hoverstad).**

Treatment <sup>a</sup>	Rate (oz/A, pt/A, lb/A or %)	Yellow foxtail				Common lambsquarters				Tall waterhemp				Yield (bu/A) <sup>b</sup>
		Jun 20	Jul 2	Jul 16	Sep 17	Jun 20	Jul 2	Jul 16	Sep 17	Jun 20	Jul 2	Jul 16	Sep 17	
<b>Preemergence/POST I (4-inch weeds)</b>														
Boundary / Flexstar + Fusion + Harmony GT + MSO + 28%N	1.5pt / 16oz + 8oz + 0.125oz + 1.0% + 2.5%	90 b	92 g	90 h	91 e	98 b	100 a	100 a	100 a	97 d	100 a	100 a	99 bc	45.8 d-f
<b>Preemergence/POST II (6-inch weeds)</b>														
Authority First / Roundup Original Max + AMS	3.2oz / 22 oz + 3qt	61 h	100ab	91 f-h	91 e	98 b	100 a	100 a	100 a	98 b	100 a	100 a	100 a	50.9 a
Authority Assist / Roundup Original Max + AMS	5oz / 22oz + 3qt	69 fg	97 cd	92 d-h	96 b-d	98 b	100 a	100 a	100 a	97 c	100 a	100 a	100 a	49.0 a-c
Intrro / Roundup Weathermax + AMS	2qt / 22oz + 3qt	91 b	99 a-c	95 b-d	95 cd	98 b	100 a	100 a	100 a	98 b	100 a	100 a	100 a	48.9 a-c
Gangster V + Gangster FR / Roundup Original Max + AMS	2oz + 0.4oz / 22oz + 3qt	81 c	100 ab	91 gh	94 de	98 b	100 a	100 a	100 a	97 c	100 a	100 a	100 a	48.7 a-e
Prefix / Touchdown Total + AMS	1qt / 24oz + 3qt	94 b	99 a-c	95 b-d	95 cd	98 b	100 a	100 a	100 a	98 b	100 a	100 a	100 a	49.1 a-c
Boundary / Touchdown Total + AMS	1.5pt / 24oz + 3qt	90 b	98 b-d	96 ab	97 a-c	98 b	100 a	100 a	100 a	98 b	100 a	100 a	100 a	47.2 b-e
Valor SX / Roundup Original Max + AMS	2oz / 22oz + 3qt	77 c-e	98 a-d	92 e-h	96 b-d	98 b	100 a	100 a	100 a	98 b	100 a	100 a	100 a	49.6 ab
Valor SX + Python / Roundup Original Max + AMS	1.5oz + 0.5oz / 22oz + 3qt	66 gh	97 de	91 gh	95 cd	98 b	100 a	100 a	100 a	98 b	100 a	100 a	100 a	49.4 a-c
Valor SX + Sencor / Roundup Original Max + AMS	1.75oz + 4oz / 22oz + 3qt	74 d-f	98 a-d	93 b-f	93 de	97 c	100 a	100 a	100 a	98 b	100 a	100 a	100 a	48.4 a-e
Sonic / Durango + AMS	4.5oz / 24oz + 3qt	66 gh	100 ab	93 c-g	95 cd	98 b	100 a	100 a	100 a	98 b	100 a	100 a	100 a	48.1 a-e
Enlite / Roundup PowerMax + AMS	2.83oz / 22oz + 3qt	78 cd	100 ab	94 b-e	96 b-d	98 b	100 a	100 a	100 a	98 b	100 a	100 a	100 a	48.6 a-e
Enlite / Roundup PowerMax + Harmony GT + AMS	2.83oz / 22oz + 0.125oz + 3qt	71 e-g	98 a-d	92 e-h	95 cd	98 b	100 a	100 a	100 a	98 b	100 a	100 a	99 bc	48.8 a-d
<b>POST I (4-inch weeds)/POST III (soybean canopy)</b>														
Roundup Weathermax + AMS / Roundup Weathermax + AMS	22oz + 3qt / 22oz + 3qt	0 i	94 f	93 c-g	98 ab	0 d	100 a	100 a	100 a	0 e	100 a	95 c	100 a	46.4 c-f
Durango DMA + FirstRate + AMS / Durango DMA + AMS	24oz + 0.3oz + 3qt / 24oz + 3qt	0 i	97 cd	94 b-e	98 ab	0 d	100 a	100 a	100 a	0 e	100 a	98 b	100 a	46.4 c-f
Touchdown Total + AMS / Touchdown Total + AMS	24oz + 3qt / 24oz + 3qt	0 i	95 ef	93 c-g	98 ab	0 d	100 a	100 a	100 a	0 e	99 b	100 a	100 a	45.7 ef
<b>POST II (6-inch weeds)</b>														
Classic + Roundup PowerMax + AMS	0.33oz + 22oz + 3qt	0 i	100 a	95 bc	96 b-d	0 d	100 a	100 a	100 a	0 e	100 a	100 a	100 a	48.4 a-e
Harmony GT + Roundup PowerMax + AMS	0.5oz + 22oz + 3qt	0 i	100 a	95 bc	94 de	0 d	100 a	100 a	100 a	0 e	100 a	100 a	100 a	47.8 a-e
Harmony GT + Classic + Roundup PowerMax + AMS	0.5oz + 0.33oz + 22oz + 3qt	0 i	100 a	95 bc	97 a-c	0 d	100 a	100 a	100 a	0 e	100 a	100 a	100 ab	46.9 b-e
Roundup Original Max + Resource + NIS + AMS	22oz + 2oz + 0.25% + 3qt	0 i	100 a	95 bc	94 de	0 d	100 a	100 a	100 a	0 e	100 a	100 a	99 bc	48.6 a-e
Roundup Original Max + Cadet + NIS + AMS	22oz + 0.4oz + 0.25% + 3qt	0 i	100 ab	95 bc	96 b-d	0 d	100 a	100 a	98 b	0 e	100 a	100 a	98 c	49.2 a-c
Roundup Weathermax + AMS	22oz + 3qt	0 i	99 a-c	96 ab	95 cd	0 d	100 a	100 a	100 a	0 e	100 a	100 a	100 a	43.5 f
<b>Checks</b>														
Weedy Check	-	0 i	0 h	0 i	0 f	0 d	0 b	0 b	0 c	0 e	0 c	0 d	0 d	8.1 g
Weed-free check	-	100 a	100 a	98 a	99 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	47.9 a-e
	LSD (0.10)	5.8	1.9	2.6	2.6	0.4	ns	ns	1.2	0.6	0.6	2.0	1.2	3.02

<sup>a</sup> COC = crop oil concentrate; MSO = methylated seed oil; NIS = nonionic surfactant; AMS = liquid spray grade ammonium sulfate; 28%N = an aqueous solution of urea and ammonium nitrate.

<sup>b</sup> Yield adjusted to 13% moisture.